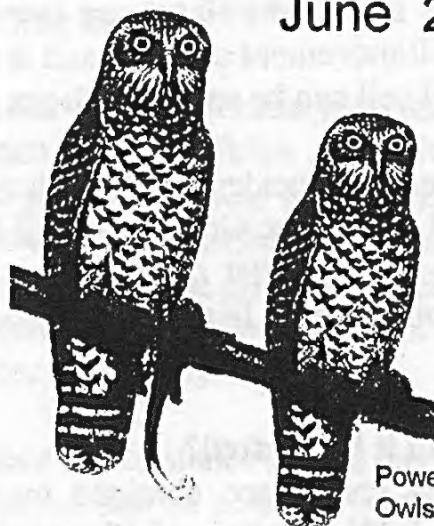


The Ballarat Naturalist

June 2001



Powerful
Owls

(after Simpson
& Day)

Cinnamon Fungus—Recovery After Dieback

Speaker: Dr. Gretna Weste

Gretna has been working on the problems of Cinnamon Fungus *Phytophthora cinnamomi* for some considerable time. By means of slides with research statistics and field shots she presented a vigorous and enthusiastic discussion of the topic.

What is Cinnamon Fungus ?

It was first identified in the Cinnamon Tree in western Sumatra, and it is not native to Australia. Many of our native plants are highly susceptible to it. Spores settle on plant roots, form cysts and send tubes into the roots. By chemical means water transport within the plant is blocked, causing death by drought. Two types of spores are produced—swimming and resistant spores. In the lab. they can be cultured on washing brightener!

In Australia dieback was first noticed in jarrah forests in 1920 but the fungus was not identified until 1965. It prefers temperatures $> 12^{\circ}\text{C}$ with moisture, so is mostly found in spring and autumn. Soil bacteria eat it, so where there is a thick layer of mulch it is less likely to be found—Sherbrooke Forest is a good example.

What does it affect?

Studies in the Grampians, Brisbane Ranges and Wilson's Prom. have shown that among the eucalypts stringybarks are particularly susceptible; 45% were lost. There was a 50-75% loss of flowering plants (with resultant loss of colour, honey, flower trade), loss of rare and endangered species, decrease in total numbers and in biodiversity. In 3 years ground cover was reduced from 70% to 10%, with implications for erosion and animal habitat. Grass tree "skirts" are needed by brown antechinus, mice, dunnarts and bandicoots. Resistant species such as ti-tree, sedges and rushes take over.

How is it spread?

Vehicles associated with recreation, logging, mining and drainage, and the footwear of workers and bushwalkers are prime culprits. Once brought in, it is spread by the downhill movement of water and is easily seen to follow bulldozer tracks and culverts. Infected soil can be spread with pot plants.

However, the incidence of the fungus decreased in the mid '80s in the Grampians and Brisbane Ranges, possibly due to drier seasons, lack of host roots, or more soil bacteria. In the '90s regeneration has accelerated.

How can it be treated?

The best results are obtained by spraying foliage with a 1-2% solution of Phosphonate or injecting trees with a 20% solution. Soil drenching works for pots. Hygiene is vital in prevention, so vehicles and footwear must be cleaned using baths. Fire only destroys the fungus in the top 20cms of soil so it is no solution to the problem.



(Hill)

Carol Hall

Cinnamon Fungus in the Brisbane Ranges—Excursion

Fifteen members and our leader Dr. Gretna Weste gathered at Meredith on a fine and mild day, then set out on the Steiglitz Road. What wonders of the natural world would befall us we did not yet know.

One of Dr. Weste's fields of expertise is the extent of the Cinnamon Fungus invasion of the Brisbane Ranges. The first stop after Steiglitz was on Butcher's Road by a patch of grasstrees (whose flowering is told in the FNCB newsletter of Nov. 2000). The

erect flower spikes, now withered and desiccated, were a dark brown colour, having run their course. But only on the foliage of the peripheral grasstrees closest to the road was there any evidence of cinnamon fungus parasitism. Some leaves had turned a sickly brown colour in response to the assault of the invader.



At 11.05am we stopped at the Stony Creek picnic area just off Switch Road. Two Galahs perched together were spotted by Les Hanrahan. There was evidence of recent flooding in Stony Creek—the grassy reeds had been flattened. White-naped Honeyeaters, Musk Lorikeets, Superb Fairy Wren

(Hill)

females, Brown Tree-creepers and the clink, clink call betrayed the presence of the clinking or Grey Currawong—all identified by Greg Binns.

On our walk along the track adjacent to the creek Greg also observed New Holland Honey-eaters and both a male and female Golden Whistler. Brian Andrews saw several types of fungi—Honey Fungus *Gymnopilus pampeanus* was seen at the base of a yellow gum and it will kill the tree in time. A Rooting Shank *Oudemansiella radicata* was found in grass; it had a brown cap 3cm across with white gills and a slender white stem. Thirdly he saw the orange-red bracket fungus *Trametes cinnabarinus*—reminiscent in colour of cinnabar, the sulphide ore of mercury.

However it was Lyndsay Fink who noted our pièce de résistance for the day: an observation many naturalists would go a long way for—a pair of powerful owls sitting together about 5 metres up in a Blackwood tree. They were not visibly shaken, but neither were they ignorant of our presence below as huge yellow eyes followed us around (a 180° turn of the head) and swayed from side to side as enormous talons gripped their perch. Members took photos and quietly gazed in wonder for a half hour before departing, leaving these creatures to contemplate a catch of Kookaburra, Ring-tailed Possum, or Greater Glider in the evening. Thank you, Lyndsay !

Our lunch break was spent in the picnic area and to our birdlist we added the White-eared Honey-eater while the aforementioned Brown Tree-creepers cheekily fed on scraps and even ate from Clare's hand.



Brown Tree-creeper

We turned into Saw Pit Gully Road and walked along Pine Track to the Old Mill Camping Ground. Kevin Andrews pointed out a koala atop a eucalypt which was little more than a sapling. A case moth cocoon was passed around. Greg drew attention to spotted pardalotes calling and Brian noted another *Trametes cinnabarinus*, plus the toxic *Schizophyllum commune*. (For a fuller report on this nasty specimen see FNCB newsletter Aug. 1999). Back at the cars Brian spotted a White Punk *Piptoporus portentosus*, a bench or shelf fungus about 5 metres above ground on a eucalypt branch. The Aborigines used this fungus (which can grow closer to the ground) when dry to carry fire from one locality to another as it smoulders readily.

Infestations of the Cinnamon Fungus appeared to be largely restricted to areas adjacent to well-worn tracks. We were only too well aware all management tracks had been closed to vehicle, bicycle and horse access to prevent the movement of infected soil.

Tony Johns

May Meeting Points

- That the monthly newsletter of Field Naturalists Club of Ballarat be called "The Ballarat Naturalist". Moved: Joan Riddell, Seconded: Bob Curtain. Carried unanimously.
- Damage to Wombat Forest roads by 4WD vehicles. Report from Frank Harrap about damage observed off New Sultan Road and his subsequent contact with DNRE.
Moved: John Gregurke, Seconded: Avis Barlow: That we endorse the action taken and request Frank Harrap to follow up the matter with DNRE on behalf of Field Naturalists' Club of Ballarat. Carried.
- Ballarat Bushland Book: Request for assistance resulting in the following volunteers:
Editorial sub-committee: Brian Andrews, Greg Binns, Carol Hall, John Gregurke, Ken Hammond. Suggested that Pat Murphy be asked to join the sub-committee.
Proof readers: Claire Dalman, Lyndsay Fink, Belinda Taylor, Maureen Christie, Frank Harrap.
Art Work: Steve Morvell.

Show and Tell.

- Carol Hall: Aerial photographs in "Images of Earth" showing geological structures.

Field Reports

- Brian Andrews: Among the mushrooms which have popped up after the rain there are many "yellow stainers" which are poisonous. Deathcaps have not yet been reported in the Ballarat district.
- Tony Johns: At Colliganan, Raptor circling over mature Eucalypts resulted in the chattering of alarmed rosellas.
- Greg Binns: Eastern Spinebills and small flock of Silvereyes at Pleasant Street South. Many fungi, including Fly Agaric at south end of Victoria Park.
- Frank Harrap: 3 Eastern Grey Kangaroos in Wombat.
- Lyndsay Fink: Flock of Red-browed Finches feeding on seeds of Spiny Bursaria at Meredith.
- Ken Hammond: Willy Wagtail flitting after insects at Webbconna Bowling Club.
- Allan Keeble: Eastern Spinebill in Ballarat North Garden. Pigeon flew into window and broke neck after being harassed by Magpies at Aquinas University.
- Steve Morvell: Little Eagle being mobbed by ravens over Victoria Park.
- Peter Billing: Great Egret in North Gardens Wetland.

Ballarat Bushland Book

The following areas are still to be covered—would you please consider contributing your expertise? We need to get the written work in for editing and proof-reading, and making the final selection of sites. If you have bird lists, plant lists, pamphlets/maps (which may now be out of print) would you kindly lend them to us?

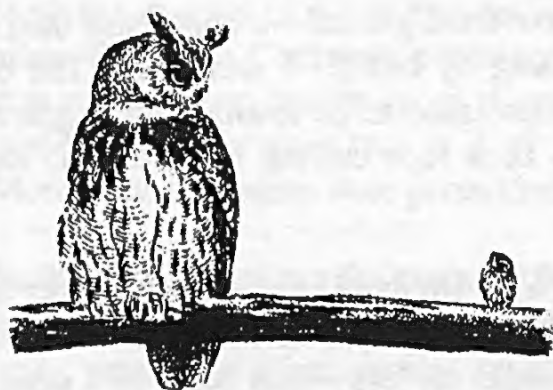
Canadian Forest
Enfield State Park
Haddon Common
Hepburn Regional Park
Lake Burrumbeet
Lake Wendouree
Nuggety Dam, Nerrina

Lake Goldsmith
Mooramong
Mt. Doran
Surface Hill Historic Area
Werribee Gorge
Basalt Block nr. Daylesford

We also need habitat photos and good close-ups of plants, fungi, birds. Prints and slides are both acceptable. The aim is to have shots of:

Intermittent wetland
Grassland
Grassy or open forest
Stringybark/peppermint association
Streamside red gums

Box-Ironbark association
Wet sclerophyll forest
Volcanic cones
Permanent wetland
Geological



The Long and the Short of it
(Sparks/Soper)

Flora and Fungi

Please remember that under the Flora and Fauna Act it is illegal to pick or remove flora and fungi. The only exception is for people with permits.

Pat Murphy has a permit to collect flora, and Brian Andrews, Rod Jones and Tom May have permits to collect fungi.

A Walk on the Calm Side

Autumn is a lovely time to wander around the La Gerche Walk. A still, sunny morning with dew still on the fallen oak leaves, the quietness was broken only by the chattering of crimson rosellas and the scolding of thornbills. A yellow robin kept an eye on me as I looked at the Landcare pool in search of photos. The water was calm, reflecting the gum trees which were lit by the pale gold of the early sun.

Past the stables the English oak had not yet lost all its leaves; this year there was no extensive spread of Fly Agarics beneath it as there had been last autumn. Along the path many Agarics lay broken and scattered—perhaps a group of youngsters had been along this way? New Holland honeyeaters flitted restlessly among the creamy bells of the Irish Strawberry blossoms.



The sun shone through the Black Pines, throwing the layered bark textures into relief, and the busy sounds of foraging wrens in the undergrowth alternated with gentle munching noises from the tree tops where invisible birds fed on the cones. Down in the gullies the air was colder, the sounds fewer. The Agarics were untouched and many more were just poking their heads above the layer of pine needles.

Sawpit Gully was peaceful in the dappled sunlight. Oak leaves glided gently to the ground in the still air. Backlit by the sun and against a blue sky, the remaining leaves glowed in shades of ochre, orange, russet and green. The moss-clad trunks and stumps were set off by the pale brown carpet which rustled as I walked along.

A gleam of blood-red caught my eye a metre above the ground—a holly bush bearing berries! Deliberate planting or accidental seeding by birds? I wondered. The oak glade was much drier this year and the Agarics seemed to be losing their bright red colouring quickly, turning pale orange-brown, their tops curling upwards into cups which caught the falling leaves.

A vertical strand of cobweb about three metres long stretching between the upper and lower branches of a tree caught the light; a wattlebird croaked harshly; the movement of a yellow robin and a male golden whistler caught my eye—they were well camouflaged among the yellowing leaves. A Bassian thrush foraged in the leaf litter and found a juicy worm.

I emerged into the strengthening light near the end of the walk, refreshed and calmed by the experience, and thankful to know that there is such a tranquil spot so close to home.

Editor.

From the Media



The following is a summary of a report broadcast on ABC Radio National's *Ockham's Razor* on 1/4/01 by Barbara Brigg, an honorary Research Associate at the Royal Botanic Gardens, Sydney.

Broken Hill is ringed on three sides by regeneration reserves, part of the legacy of Albert Morris, a metallurgist at one of the major mines. His passion was for the native plants of arid inland Australia, and for enlisting those plants to improve the environment for all who lived in inland Australia. He was a self-taught amateur in botany, but was recognised nationally for his knowledge of plants of his region and his understanding of their ecology.

After trying to make a conventional garden he came to recognise the value of native species, collecting seeds and propagating them. Watching the dust-storms and how the bare sand drifted, he dreamed of having a ring of vegetated areas around the town to hold the soil.

With others he founded the Barrier Field Naturalists Club; he lectured on plants and vegetation, stressing the need for planting trees and fencing off sections of properties to allow regeneration. In 1935 James Keast, newly appointed manager of the Zinc Corporation Mine, sought ways to conquer the dust problems which made life so harsh. He 'found' Bert; a nursery was established at the mine using waste water from the miners' showers.



With the support of Keast and the FNC the next step was to persuade the Council to allow the Town Common, a treeless expanse of sand, to be fenced. Bert maintained that regeneration would occur if grazing was removed. Despite ridicule they persevered, enclosing more than 9 Km². Its success led to further calls for revegetation. More mine managers were persuaded to share the costs.

Sadly Bert did not see the eventual full success of the regeneration as he died less than a year after the fencing was completed (1939). Nor did he see that his methods were being applied at other mining towns in Australia and that the improvement in living conditions was quoted around the world.

Bert Morris's legacy extends to a 7000 documented plant collection represented in several of Australia's major herbaria. More than 500 are on record in Sydney's Royal Botanic Gardens.

Margaret Tonkin.



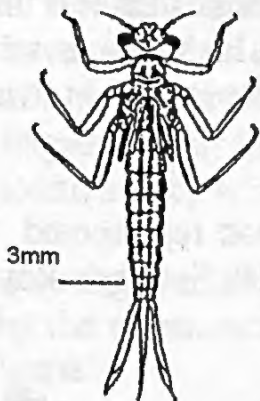
Wetlands Management

The importance of establishing and maintaining our local wetlands was stressed by Tim D'Ombra, City of Ballarat Parks and Environment LINCS coordinator in a recent talk to U3A Current Affairs group. Tim's enthusiastic description of how the Yarrowee River Landscape plan (1995) is being implemented was illustrated by photos from a Ballarat Environmental Library CD (Carol now has a copy and is nutting out the operating program).

This major Ballarat waterway was sadly degraded before rehabilitative work begun originally by Friends of Yarrowee was continued by LINCS (Linear Network of Communal Spaces).

The project involves:

- Creation of parks, recreation areas and trails from the Gong Gong to Yuille station Park (Vickers St) by using management plans maximising recreation and conservation values.
- Tree planting, weed control (gorse etc.), replanting of sedges, trail formation and maintenance. Use of a specially set up nursery (Ring Rd) for plant provision.
- 4 staff, 10 supervised Community jobs (award wages) and community input including planning ideas from Landcare groups, Australian Trust for Conservation Volunteers, schools and community service and recreation clubs.
- Installation of filters and litter traps from Ballarat urban stormwater drains. With decreased rubbish contamination water quality has improved and is being monitored by Waterwatch. Perhaps a return of native fish one day.
- Incorporation of cost-effective ideas from a tour of Melbourne stormwater control systems such as use of rocks and macrophytic waterplants placed in herring - bone formation to slow speed of water and help remove excessive nutrients. Wetlands can now act as retention basins to help mitigate floods.
- Linking with the Leigh Catchment plan to form a Ballarat to Barwon Project. Already the Yarrowee trail forms part of the Great Dividing Trail link between Ballarat and Daylesford and the Troopers Trail to the Eureka Stockade.



Dragonfly nymph

Experience the Yarrowee Trail for yourself to see the marked improvement and spectacular growth of tree plantings. I did!

Dulcie Brooke.

Mid-month Excursion: Clunes State Forest

Six Km north of Clunes a sign on the west side of the road indicates access to this box-ironbark woodland. Visible from the main road was the restored roof of an old eucalyptus distillery, complete with boiler, concrete tanks, a crane and rebuilt chimney. It would be interesting to know which species of trees were used for oil extraction.

The area is characterised by Red Ironbark, Red Box, Yellow Box and Yellow Gum, with some Long-leaved Box. (respectively *E. sideroxylon*, *polyanthemos*, *meliadora*, *leucoxylon*, *goniocalyx*). Mistletoe was abundant, and the understorey included great thickets of Hedge Wattle (*A. paradoxa*) in which old nests were found. Golden Wattle (*A. pycnantha*) and Gold-dust Wattle (*A. acinacea*) were also present, presaging a mass of golden blooms later in the season. We found new buds of Sticky Everlasting *Bracteantha viscosa*, formerly *Helichrysum viscosum*.



Buds (x 1)



Fruit (x 1)

Red Box
(Costermans)

The main track crossed the railway line; we followed it to where the track forked, and parked. Red Wattlebirds called, and Yellow-tufted, Brown-headed and Fuscous Honey-eaters were seen, the former in considerable numbers. Dusky Woodswallows and a pair of Wedgetailed Eagles flew overhead, while White-browed Babblers flung the leaf litter aside in their quest for food. We added a female Golden Whistler and some Eastern Rosellas to the list but perhaps because of the dull overcast day there was not a great deal of bird life.

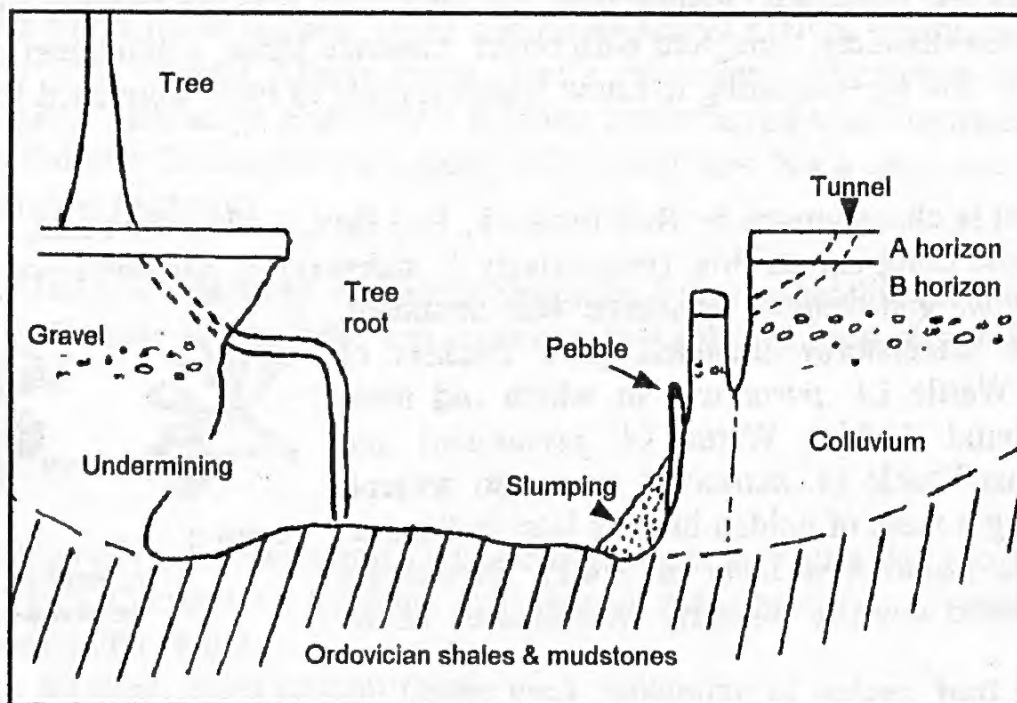
A dead tree, stripped of its bark, showed the cambium layer riddled with borer holes and patterned by the tunnels carved out by the insects. Some holes contained old pupae, while on the ground we came across two empty orange-brown pupae, about 5-6cm long, probably belonging to the goat moth.

Elaine and Helen were pretty certain they'd found an Antechinus in an old tree stump, and the rest of us gathered round. However a rapid scurrying movement was all the rest of us could see. The ladies checked out a few more stumps but without success.

We found that we had parked at the head of a severely eroded gully, draining westwards. It exhibited considerable damage from last month's downpours, and we walked along its length, impressed by its depth—3 or 4 m. in places, and 5 to 6 m. wide.

On the Ordovician shales and mudstones, pre-existing valleys have been infilled with material moving downslope—colluvium. On this parent material a yellow duplex soil

has formed, the top or A horizon consisting of a grey clay loam; the B horizon is a deep yellow silty clay. Layers of pebbles can be found throughout.



Gully Cross-section

The bottom of the gully revealed the underlying bedrock; the walls showed evidence of rill formation and slumping. Water flowing down rabbit burrows and tree roots has caused tunnelling: the B horizon is highly dispersible, washing out and causing the undermined A horizon to collapse. Pieces of gravel had been left perched on columns of colluvium, the hard pebbles protecting the subsoil from rainwash. The gully walls were severely undermined, in places going right through to the adjacent gully leaving the intervening bank with no support. Tree roots were exposed, indicating the depth to which soil had been removed.

Retracing our tracks back to the highway we continued north, taking the Carisbrook turn-off which leads to Fells Gully Road. This in turn becomes Fells Gully Track, giving access to that part of the State Forest which lies east of the highway. Following the track we explored an area adjacent to pastureland; more White-browed Babblers foraged on the ground ahead of us and a Spotted Pardalote displayed its rich colouring just above our heads. In the paddock a Flame Robin perched high on a dead tree, its orange-red breast clearly distinguishing it from the Scarlet Robin. Kevin flushed a Brown Quail in the undergrowth and as we drove out a Swamp Wallaby took off through the trees.

Carol Hall.

CD-ROM

Wild about Western Australia pub. CALM 1997 \$40.

Installation of the files required to run this multi-media CD is not the easiest but is worth persevering with ! Published by the WA Dept of Conservation and Land Management (CALM) this CD contains information on all the National Parks gazetted at the time of publication – 1997.



Numbat (Cronin)

For each Park a slideshow is available, and often a movie or virtual reality shot. Information is provided on the main features, access, accommodation, ranger stations; sketch maps show its location. A spoken commentary can be heard as well as read; search facilities enable you to look up flora and fauna species which are illustrated and annotated. This is a comprehensive CD which would be of assistance when planning a trip, or just for browsing.

Book

Dinosaurs of Darkness Tom Rich and Pat Vickers-Rich. pub. Allen & Unwin.

Husband and wife team Tom Rich and Pat Vickers-Rich have worked together in the field of palaeontology for many years. After arriving in Australia for the USA in the 1970's Tom discovered that the fossil record at that time for vertebrates in the early Cretaceous period was non-existent. So began the excavations at Dinosaur Cove in the Otways and at Inverloch at the edge of the Strzelecki Ranges.

The book describes the finding of the fossil dinosaur fragments and their identification. Research elsewhere in the world is seen to contribute to the reconstruction of the palaeoenvironment in which these creatures lived – the temperatures, geographic locality and conditions of sedimentation that resulted in the burial and preservation of the dinosaurs. The book describes ways in which rocks can be dated, and how correlations can be made between continents.

At the end of the book the authors bring together all their evidence, postulating that SE Australia was just south of the Antarctic Circle 125 m.y. ago, beginning to break off from Gondwana, and that the dinosaurs they found were adapted to low light levels typical of the polar winter.

Such a comprehensive book will be better appreciated by those already familiar with geological processes and terminology, although the authors have explained their ideas, research methods and conclusions clearly. Black and white diagrams, photos and maps have detailed labels and are situated next to the text they illustrate.

Bibliography, index. Limp. 204 pp. 8 pages colour photos. \$39.95.

All reviews this month: Carol Hall.

Book kindly lent by Tony Wilson.

Calendar

June

- Fri. 1 Meeting: *Identifying Australian Fungi*. Rod Jones & Brian Andrews.
- Sat. 2 Excursion: *Fungi around Blackwood*. Leaders Rod Jones & Brian Andrews.
- Wed. 13 Mid-month Excursion: Basalt Block & Hepburn Regional Park. Carol et al.
- Mon. 18 Booklet Meeting @ John Gregurke's, 3pm.
- Fri. 22—Mon. 25 Club Camp-out, Star of the Sea Convent, Apollo Bay. Leader John Mildren.
- Wed. 27 Committee Meeting @ Brian Andrew's, Durham Lead. 7.30pm

July

- Fri. 6 Meeting: Ray Draper - Growling Grass Frog.
- Sat. 8 Excursion: Canadian Forest & Mike Healy's Fernery.

Supper Duty for -	June:	Tony Johns & Eileen Anderson
	July:	Carol Hall & ?

Committee

President Mr. Brian Andrews

Vice-President Mr. Greg Binns

Secretary Mr. John Gregurke

Treasurer Mr. Bob Curtain

Miss Helen Burgess.....

Miss Maureen Christie.....

Mrs. Claire Dalman.....

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Mr. Les Hanrahan.....

Mr. John Mildren.....

Ms. Gail Whyte.....

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Meetings are held at the Ballarat Horticulture Centre, cnr. Gregory & Gillies Sts (VicRoads 254 F8) on the first Friday of the month at 7.30pm.

Excursions: Depart from Creswick Plaza, Creswick Rd., Ballarat (VicRoads 255 M10) at 9.30am unless otherwise specified.

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